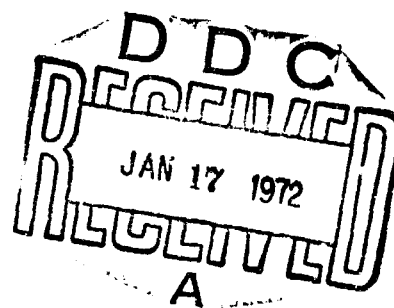


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THE RELATIONSHIP BETWEEN PAST BACKGROUND AND DRUG USE

Steven F. Bucky



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SUMMARY PAGE

THE PROBLEM

The purpose of the present study was to determine whether social-history variables discriminate among no-drug, marijuana, amphetamine, LSD, and heroin users. A questionnaire with items on specific drug use, family background, school, and military history was anonymously administered to 1508 Navy enlisted men. Approximately 13.6 per cent refused to fill out the form.

FINDINGS

There was little difference between the no-drug and marijuana user. In general, however, there was a progression from the no-drug to the marijuana, amphetamine, LSD, and heroin groups in terms of family difficulties and trouble in school, as well as disciplinary action in the Navy. The majority of the marijuana group had not taken other drugs, whereas the majority of the other drug groups had taken marijuana. Multiple correlations of .47 and .68, using no drug and heroin use as the criteria, suggest that prediction for these groups is possible. Multiple correlations, ranging from .23 to .29 for the marijuana, amphetamine, and LSD groups, make predictions of such drug use virtually impossible at this time.

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INTRODUCTION

The purpose of the present study was to determine whether, among Navy enlisted men, there were any social-history variables that would distinguish drug users from nondrug users, and if such variables differentiated those who use only marijuana from those on amphetamines, LSD, heroin, or various combinations thereof.

In a review of recent research on the use and abuse of various types of drugs, as well as the side effects of these drugs, it was suggested by McGlothlin and Arnold (9) and by Fink, Simeon, Hague, and Itil (5) that the variable effects of each drug may be a function of a pre-existing personality structure or of pre-existing psychopathology of the individual taking the drug. The drugs may be producing changes in the personality, but, at the same time, the different drugs may be attracting different types of persons.

The Council on Mental Health and Committee on Alcoholism and Drug Dependence (3), for example, reported that, in general, those people who use marijuana have experienced customary adolescent difficulties, are trying to discover their identity, and are attempting to maintain a balance between their new-found independence and their prior dependent status. The Council reported that users have experienced a sense of failure and, as a result, are seeking new and exciting experiences; they use marijuana at least initially out of curiosity and then to conform to social pressure. Recent studies have suggested that students on marijuana lose their motivation and, as a result, drop out of school. Steffenhagen, McAree, and Zheutlin (11), in a study at the University of Vermont, however, reported that students using marijuana had grade point averages similar to those who did not take any drugs. The results imply that marijuana does not have such a detrimental effect. Other investigators also suggested that the more the drug is used, the more the individual experiences conflict.

Very few studies have been done on amphetamine use. The Committee on Alcoholism and Addiction and Council of Mental Health (2) reported that amphetamines are used by women more often than by men and for the purpose of overcoming deep feelings of depression, especially by those who have very low self-esteem. In a review of the literature on amphetamine use, Cox and Smart (1) reported that "speed" is attractive primarily to young people in their teens and early twenties. They are not interested in gaining new insight or deeper understanding of themselves as are those on LSD. They are also more likely to come from working-class homes and use the drug as a release of aggression.

Glickman and Blumenfield (6) reported that people take LSD to understand themselves better, to help them do better in school, and for curiosity. It frequently begins at the time of a life crisis, which is usually sexual, social, or professional in nature, and when the subjects feel depressed. All of the subjects in their study were taking LSD along with other drugs. McGlothlin and Arnold (9) stated that at least 2 million

persons in the United States are on LSD. These are primarily middle-class persons who prefer an unstable, spontaneous style of life as opposed to a stable, orderly structured one. The authors stated that those who take LSD obtain high scores on tests of risk taking and sensation seeking. Edwards, Bloom, and Cohen (4) found that LSD users are frequently hostile and have considerable difficulty handling aggressive feelings. Smart and Fejer (10) found that LSD users are usually single, under 25, upper middle class, and underachievers who frequently possess symptoms associated with character disorders. The authors also reported that the LSD user has experienced love and uses the drug to create an anxiety-free and emotionally intense atmosphere of togetherness.

Torda (12) described heroin users as narcissistic, passive-dependent individuals who are subject to magical thinking and day dreaming. They are extremely mistrustful, bordering on paranoid projection. The author found that, for the heroin addict, the mother represented authority, with overt aggressive behavior being intolerable. The father was frequently absent and, when present, frequently an alcoholic. The addict usually was the favorite child of the mother, though she was never able to express genuine love for him. The subjects in Torda's study usually felt complete helplessness and worthlessness, with very low frustration tolerance. They were also hypersensitive, masochistic, and described as loners. Hekimian and Gershon (7) reported that heroin users are sociopathic and desire the euphoria from the drug due to the underlying intense depression. The MMPI profiles of heroin addicts in the McAree, Steffenhagen, and Zheutlin study (8) were consistent with those of the sociopath. Twenty per cent of their group had a secondary peak on the depression scale; they were also high on masculinity-femininity. Those authors found that, in general, the MMPI profiles of those on heroin included many elevated scales, suggesting more psychopathology in addicts compared to those who were only on marijuana.

The results of the studies described above suggest that those who use one type of drug and various combinations of drugs may, in fact, be very different types of persons from those on other drugs. However, no single study has used the same procedure to elicit social-history variables for all of the major drug groups; as a result, comparisons of one group of drug users to another have been virtually impossible.

PROCEDURE

SUBJECTS

Questionnaires were administered to 1508 Navy enlisted men stationed at one of five bases in the Pensacola, Florida, area. On the basis of their responses, 937 (72%) comprised the no-drug (ND) group; 129 (10%) reported that they had taken only marijuana (M); 42 (3%) had taken at least heroin (H); 87 (7%) had taken at least LSD but not heroin (L); and 106 (8%) used at least amphetamines, but had not taken LSD or heroin (A). The four drug groups were separated in such a way that each group would be mutually exclusive and no one subject would be counted twice. The subjects were asked to take the questionnaire voluntarily and anonymously. Nevertheless, 13.6 per cent of the group (N=207) refused to fill out the questionnaire.

QUESTIONNAIRE

The questionnaire was a modification of the standardized psychiatric interview questionnaire given to all inpatients and outpatients at the Naval Aerospace Medical Center, Pensacola, Florida. Instead of open-ended questions, each item was reworded in multiple-choice form so that it could be easily analyzed by a computer. There were 42 items: 12 pertained to specific drug use, 18 focused on the subject's parents and siblings, 2 related to his education, 3 to disciplinary difficulties, 3 to marital status, 3 to military background, and 1 to the subject's age.

RESULTS

The results of the present study are divided into three sections, the first being a description of the frequency and combination of drug use. Subjects were included in one or more groups, depending on the number of different drugs used. The second section is a description of drug use as well as the social-history variables for each of the five mutually exclusive groups described above. Percentages were computed for each of the groups; since the percentages were rounded off, they do not always add up to 100 per cent. The final section presents the predictions of drug use and nondrug use as computed by the multiple-correlation technique.

INCIDENCE OF DRUG USE

Appendix A (Tables A I to A V) presents the percentage of use of each drug by drug users. It should be noted again that the groups in these tables are not mutually exclusive and, therefore, the results must be interpreted with caution. Each group is made up of all those subjects who had had the particular drug at least once. The groups were divided in such a way as to provide data on the combinations and frequencies of drug use which are not available from the mutually exclusive groups described in Appendix B. (Note: Appendix A and B include data also on barbiturate (B) use.)

At least 80 per cent of all drug groups had used marijuana. The highest percentage of marijuana use was found in the L group.

Only 40 per cent of the M group had taken amphetamines, whereas 71 to 70 per cent of the B, L, and H users had taken amphetamines. The heaviest use of amphetamines was found in the L and H groups.

Only 23 per cent of the M group had taken barbiturates; 63 per cent of the H group had used the drug once or more, with 34 per cent of the group having used the drug more than 16 times.

Only 23 per cent of the M group, 42 per cent of the A, and 45 per cent of the B users had used LSD once or more, whereas 76 per cent of the H group had used the drug that frequently.

As for heroin use, only 6 per cent of the M group, 14 per cent of A, 18 per cent of the B, and 23 per cent of the L users had taken heroin.

DRUG USE AND SOCIAL HISTORY VARIABLES

A composite of the percentages of responses obtained from each of the 42 questions for the ND group as well as the four drug groups is contained in Appendix B.

There was very little difference in terms of age for each of the groups, though the A group, in general, was slightly older and the L group slightly younger.

Frequency of Drug Use

Seventy-three per cent of the M group had smoked marijuana less than five times. Twenty per cent of the A group, 5 per cent of the L group, and 15 per cent of the H group had never smoked marijuana. At least 67 per cent of each drug group had used marijuana in a group. However, it should be noted that the A, L, and H groups had used marijuana in a group more than the M group had.

Fifty-two per cent of the A group had used amphetamines less than five times. Seventeen per cent of the L group and 28 per cent of the H group had never used amphetamines. Sixty-nine per cent of the A group had used the drug primarily by themselves; however, when the L (56%) and H (65%) groups used amphetamines, they did so primarily in a group.

Slightly over half of the A, L, and H groups had never used barbiturates. When the A group had used barbiturates, 71 per cent had done so primarily by themselves; however, approximately 50 per cent of the L and H groups had used barbiturates in group settings.

Forty-nine per cent of the L group had used LSD five times or less. Fifteen per cent of the H group had never used LSD; 78 per cent of the L group and 72 per cent of the H group had used LSD primarily in group settings.

Fifty-two per cent of those in the H group had used heroin five times or less. Fifty-three per cent had used the drug in a group and 47 per cent primarily by themselves.

Relative to the other drug groups, more subjects in the M group (40%) had started using drugs because it "feels good"; only 22 per cent of the A group had started for similar reasons. Fifteen per cent of the H group had started because of friends and another 15 per cent of that group because they were unhappy. At least 33 per cent of each group said that they did not know why they started or that they had started for reasons other than "it feels good," "friends," "or they were unhappy."

As for the time at which each subject had started taking drugs, the results show that 57 per cent of the M group had started less than one year ago, whereas only 11 to 17 per cent of the other groups had started less than a year ago. With at least 3 years of drug use as the cut-off point, the use of drugs increased consecutively from one drug group to the next. Only 11 per cent of the M group, 44 per cent of the A group, 55 per cent of the L group, and 70 per cent of the H group had used drugs for more than 3 years. (See Figure 1.)

Parents

Answers regarding the father's age show that for each of the five groups, there was little difference in terms of the father's age, though those in the M and H groups tended to have younger fathers; those in the L group had fewest fathers in the 45 and older group.

As for father's education, those in the L and particularly those in the H groups had fewer fathers with less than a high-school education and more with some college or a college degree. No educational difference among the ND, M, and A groups was noted.

Approximately 50 per cent of the ND, M, A, and L groups reported that they had an excellent relationship with their father; however, when adding the percentage of subjects who had a fair to poor relationship with their father, there was a continuous increase in such a relationship progressing from the ND (11%), M (14%), A (20%), L (21%), and H (31%) groups. (See Figure 2.)

Fathers of the L and H groups were more frequently heavy drinkers than those of the ND, M, and A groups. Similarly, the fathers in the L and H groups smoked more than the other groups. It is interesting to note that the lowest percentage with fathers who smoked more than one pack was the M group (3%). Seven per cent of the fathers in the ND group, 9 per cent in the A group, 11 per cent in the L group, and 13 per cent in the H group smoked more than one pack a day.

There was virtually no difference in terms of mother's age, though the mothers in the L and M groups were slightly younger. There was also little difference in the mother's education, though mothers in each of the drug groups tended to have more education than those in the ND group. Mothers of the H group had the most college education; and relative to the other groups, there were fewer mothers in the A group who had less than a high-school education.

When describing the relationship with their mothers, subjects in the ND and M groups reported almost identical percentages in each of the categories; approximately 60 per cent reported an excellent relationship with mother. A reversal of the percentages should be noted in that a higher percentage of the L group (56%) as opposed

M - MARIJUANA
A - AMPHETAMINES
L - LSD
H - HEROIN

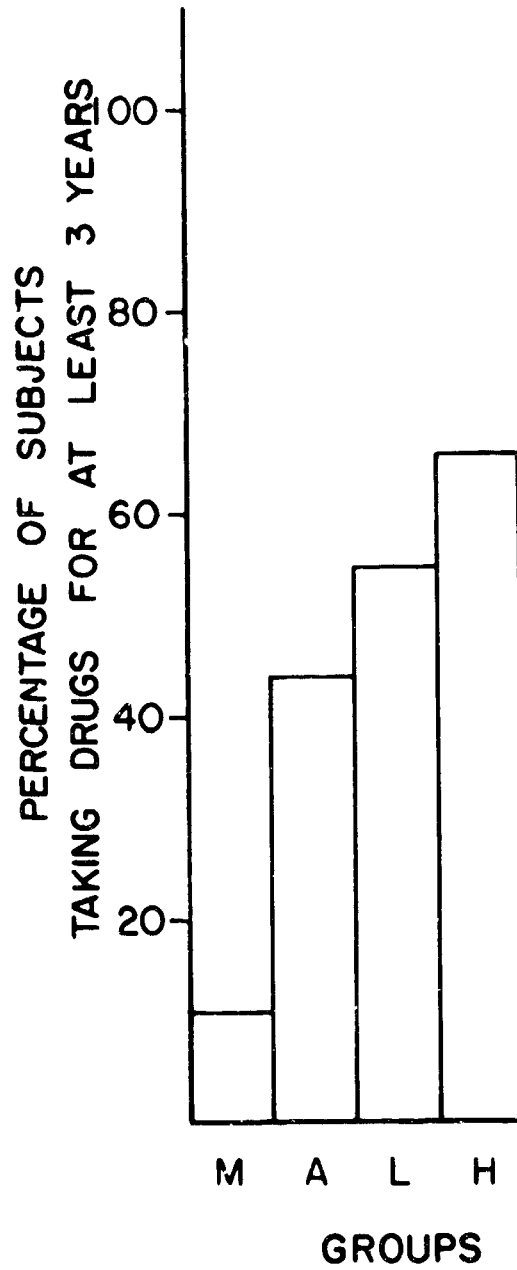


Figure 1

Percentage of User Groups Taking Drugs for 3 Years or More

ND - NO DRUGS
 M - MARIJUANA
 A - AMPHETAMINES
 L - LSD
 H - HEROIN

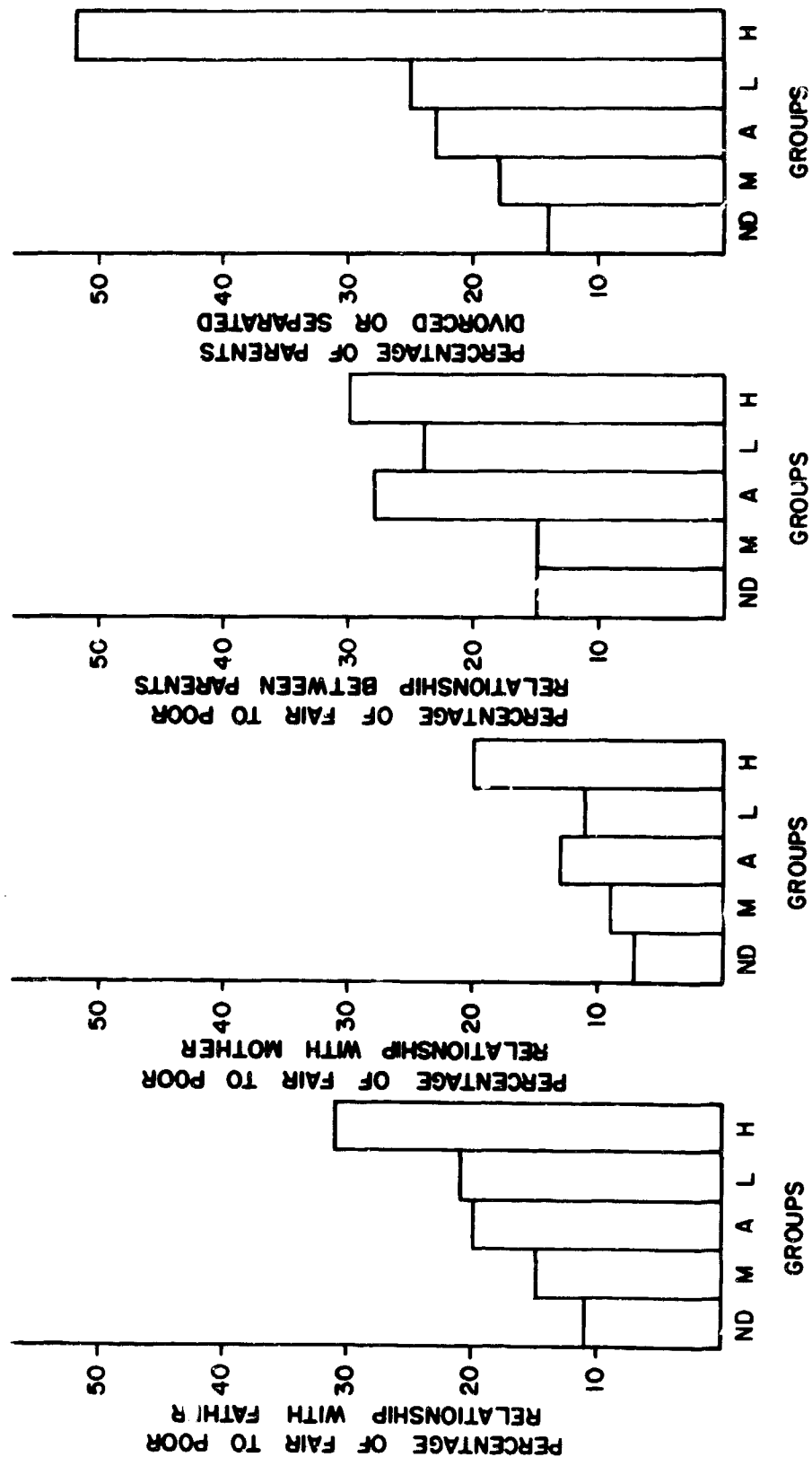


Figure 2

Family Relationships of the Five Study Groups

to the A group (49%) reported an excellent relationship with mother. The lowest percentage was found in the H group. A similar reversal was observed when combining the fair to poor categories. (See Figure 2.)

There was virtually no difference between the ND and M groups with regard to their mothers' drinking and smoking. There was more moderate to heavy drinking by mothers in the A group (12%), L group (17%), and H group (33%) than in the ND and M groups (9%). As for their mothers' smoking, those of the A (27%) and H (26%) groups smoked more than those of the ND (23%) and M (20%) groups; the heaviest smoking occurred in the L group (30%).

Data focusing on the relationship between the subject's mother and father showed that relative to all of the other drug groups, as well as the ND group, a higher percentage of the M group had parents who had an excellent relationship with each other (61%). The parents of the H (30%) and A (28%) groups had the highest percentage in the fair to poor range; 24 per cent of the L group described their parents' relationship as being fair to poor.

Only 19 per cent of the parents of the subjects in the H group were still living together; from 65 to 77 per cent of the parents in the other groups were still living together. Little difference was observed between the ND and M groups and the A and L groups in terms of parents living together.

The M group had the highest percentage of fathers still living (97%). There was little difference among the other groups, with the exception of the H group for whom only 63 per cent of the fathers were still living. There was virtually no difference among the ND, M, A, and L groups in terms of mothers still living (93 to 96%). For the H group, however, only 70 per cent reported that their mothers were still living. Seventeen per cent of this group indicated that they did not know whether their mothers were living; 20 per cent also indicated that they did not know whether their fathers were still alive.

Socioeconomic Conditions

Data associated with socioeconomic factors indicate that there were more laborers in the M group (19%) and fewer in the A group (5%) than any of the other groups. There were fewer craftsmen (9%) and professionals (1%) and more farmers (20%) in the H group and fewer farmers (1%) in the L group. As for family income, the A group had the smallest percentage (3%) of less than a \$5,000 yearly income; the H group had the highest (13%). It should be noted that 31 to 35 per cent of all drug groups came from families with over \$15,000 as their family income. Only 22 per cent of the ND group came from a family with such an income.

Siblings

Data regarding the number of siblings in the family as well as birth order indicate that there was virtually no difference among the ND, M, and A groups as far as the number of siblings in the family was concerned. Those on LSD generally came from smaller families, those on heroin from the largest families. In spite of the fact that those in the H group generally came from large families, this group had the highest percentage of only children (11%); the L group had the highest percentage of youngest children (25%); the H group had the lowest percentage of youngest children (9%). Those in the M (50%) and H (46%) groups were in the middle of the birth order more frequently than those of the other groups (35 to 39%).

School History

Those on drugs, in general, had a higher percentage of subjects with less than a high-school education than the ND subjects; those in the L group had the highest percentage of such subjects (21%). The H group had the lowest percentage of subjects with a high-school education or less (41%), whereas 51 to 55 per cent of the other groups had a high-school education or less. Virtually no difference was observed in terms of the percentage of subjects with a college education. In spite of the fact that the H group had fewer subjects with an education of high school or less, the L and H groups completed school at a younger age than the other three groups. The ND group were considerably older than the other groups when they completed school.

It is interesting to note that there was a general increase in truancy and the number of expulsions from school (Appendix B and Figure 3) as one progressed from the ND group to the M group to the A, L, and H groups. Forty-four per cent of the ND group and 82 per cent of the H group reported having been truant; 15 per cent of the ND group and 69 per cent of the H group reported having been expelled from school. A similar relationship was observed in terms of the number of arrests (Appendix B and Figure 3). Only 13 per cent of the ND group reported having been arrested; 20 per cent of the M group, 38 per cent of the A group, 50 per cent of the L group, and 70 per cent of the H group had been arrested at least once.

Marital Status

The ND group (15%) and the H group (17%) had the highest percentage of married subjects. The H group also had the highest percentage of divorces (17%). The H group had the most children; the M group had the least. As for the quality of the marriage, the M group had the highest percentage of excellent marriages (81%); the ND group was second (57%), and the A group had the least (25%). The H group (18%) had the highest percentage of poor marriages. The other groups reported that 0 to 7 per cent of their marriages were poor.

ND - NO DRUGS
 M - MARIJUANA
 A - AMPHETAMINES
 L - LSD
 H - HEROIN

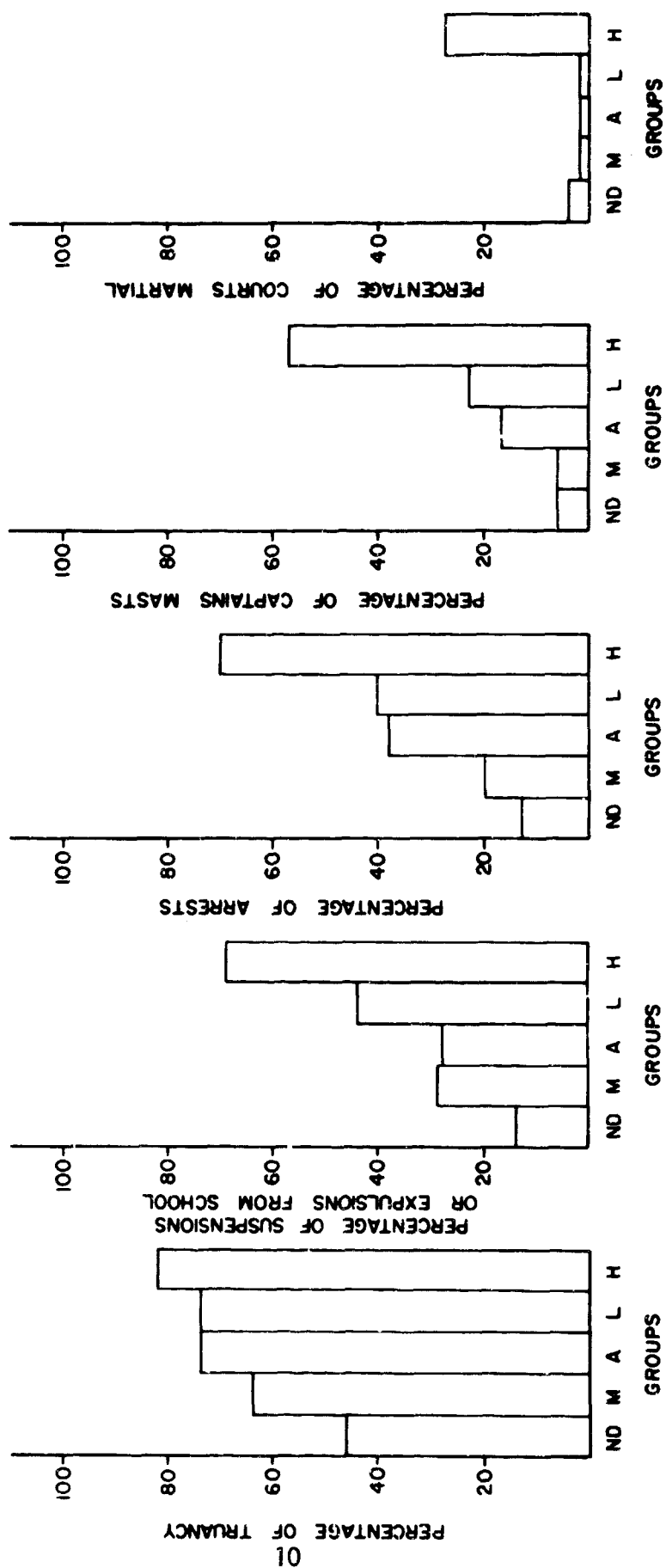


Figure 3
 Relationship Between Drug Use and Legal and Disciplinary Difficulties for the Five Study Groups

Military History

The M group had been in the Navy for a shorter period of time than any of the other groups (67% less than one year). Thirty-three per cent of the A group, 24 per cent of the L group, and 20 per cent of the H group had been in the service for less than one year. The percentage of men who had gone to captain's mast was almost identical to the prior behavioral difficulties encountered in school (Figure 3). Five per cent of the subjects in the ND group and 6 per cent of the M group had gone to mast; 13 per cent of the A group, 23 per cent of the L group, and 57 per cent of the H group had been to mast. There was virtually no difference among the ND, M, A, and L groups in terms of the percentage of subjects that had had a court-martial (2 to 4%), though 25 per cent of the H group had had such a legal difficulty.

PREDICTIONS

In an attempt to predict who will eventually use drugs, a multiple correlation was computed five times for all subjects, using no drug, marijuana, amphetamine, LSD, and heroin use as the criteria. Due to missing data, the N was reduced to 727 for the entire group, with 609 in the no-drug group, 43 in the marijuana group, 30 in the amphetamine group, 18 in the LSD group, and 27 in the heroin group.

With no drug use as the criterion, 16 variables combined to present a cumulative multiple R of .47 (Appendix C, Table C I). With $p < .05$ as the level of significance there was a significant negative relationship between no drug use and arrests, truancy, suspensions from school, captain's masts, years in the Navy, and mother's education and drinking. There was a significant positive relationship between no drug use and the age at which the subject completed school. The mothers in the group generally were living; there was a positive relationship between no drug use and mother's age and a negative relationship with mother's smoking habits. The relationship between the subject and his mother was described favorably. There was a negative relationship between no drug use and father's education and the number of siblings in the family.

A multiple correlation of .24 was obtained for the M group (Table C II). There was a significant negative correlation between M use and captain's masts and a positive relationship between M use and truancy, the father's drinking habits, and the subject's marital status (the subjects were most often single). The other variables that helped contribute to the multiple correlation although did not achieve statistical significance were: a positive relationship between M use and mother's education, years in the service, the number of siblings in the family, and mother's drinking and smoking habits. There was an inverse relationship between M use and father's age, the age at which the subjects completed school, and arrests.

There were 13 variables that combined to produce a multiple correlation of .23 for amphetamine use (Table C III). The only two variables that significantly contributed to the correlation were truancy and courts-martial. There was also a positive though insignificant relationship with arrests and years in the service, but not captain's masts.

It is interesting to note that the subjects reported a positive relationship with father as well as between mother and father. There was a negative relationship between amphetamine use and father's drinking and mother's smoking habits. Mothers were living. The subjects tended to be single or divorced and came from higher income families.

A multiple correlation of .29 was obtained for the LSD group (Table C IV). There was a significant positive relationship between LSD use, arrests, captain's mast, and mother's smoking habits; mothers generally were living. Other variables that contributed to the correlation included a positive relationship between LSD and mother's, father's, and subject's education, as well as subject's years in the service. The subjects tended to be either in the middle of the birth order or the youngest in the family. There was a negative relationship between LSD use and family income, the age at which the subject completed school, and courts-martial. Fathers in this group generally were living.

For the heroin group, 15 variables combined to obtain a multiple R of .67 (Table C V). There was a significant positive relationship between heroin use and being expelled and suspended from school, arrests, captain's mast, and mother's education, drinking, and smoking habits. There was a significant negative relationship between heroin use and the subject's age. The fathers in this group generally were not living. Other variables that were positively related to heroin use were father's drinking habits and his education, courts-martial, and family income. Those variables that negatively related to heroin use were the subject's education and father's smoking habits. The subjects were frequently first born or only children.

CONCLUSIONS

The results described above present a number of consistencies which should be noted: 1) Although the majority of drug users smoke marijuana in a group, it appears that the LSD and heroin groups are more group oriented; that is, they take all drugs in a group more often than those who take marijuana, amphetamines, and barbiturates. 2) Those who smoke only marijuana start because it feels good, whereas those on heroin start because of friends or because they are unhappy. 3) There appears to be a progression in terms of the number of years one has taken drugs; that is, the length of time that one has taken drugs increases as one goes from marijuana to amphetamines to LSD and heroin. 4) There is a similar progression in terms of fair to poor relationship with father, and with the exception of the LSD group, in the relationship with mother; the LSD group reported a more positive relationship with mother than the amphetamine group. 5) A similar progression is noted in terms of the number of families that are still living together. 6) It is particularly interesting to note that a relatively high percentage of subjects in the heroin group are unaware as to whether their mothers and fathers are still alive. 7) As for difficulties in school and in the Navy, the progression described above was observed in

terms of the frequency with which the subject was truant, suspended, arrested, and had gone to captain's mast. Little difference among the drug groups was noted in terms of courts-martial, with the exception of the heroin group who had had such legal action against them considerably more frequently than other groups.

REFERENCES

1. Cox, C., and Smart, R., The nature and extent of speed use in North America. Canad. Med. Ass. J., 102:724-729, 1970.
2. Committee on Alcoholism and Addiction and Council on Mental Health, Dependence on amphetamines and other stimulant drugs. J.A.M.A., 197:1023-1027, 1966.
3. Council on Mental Health and Committee on Alcoholism and Drug Dependence, Dependence on cannabis (marijuana). J.A.M.A., 201:368-379, 1967.
4. Edwards, A. E., Bloom, M. H., and Cohen, S., The psychedelics: Love or hostility. Psych. Rep., 24:843-846, 1969.
5. Fink, M., Simeon, J., Hague, W., and Itil, T., Prolonged adverse reactions to LSD in psychotic subjects. Arch. Gen. Psychiat., 15:450-454, 1966.
6. Glickman, L., and Blumenfield, M., Psychological determinants of LSD. J. Nerv. Ment. Dis., 146:79-83, 1967.
7. Hekimian, L. J., and Gershon, S., Characteristics of drug abusers admitted to a psychiatric hospital. J.A.M.A., 205:75-80, 1968.
8. McAree, C. P., Steffenhagen, R. A., and Zheutlin, L. S., Personality factors in college drug users. Intern. J. Soc. Psychiat., 15:102-106, 1969.
9. McGlothlin, W. H., and Arnold, D. O., LSD revised. Arch. Gen. Psychiat., 24:35-49, 1971.
10. Smart, R., and Fejer, D., Illicit LSD users: Their social backgrounds, drug use and psychopathology. J. Health Soc. Behav., 10(4):297-305, 1969.
11. Steffenhagen, R. A., McAree, C. T., and Zheutlin, L. S., Social and academic success associated with drug use on the University of Vermont Campus. Intern. J. Soc. Psychiat., 15:92-106, 1969.
12. Torda, C., Comments on the character structure and psychodynamic processes of heroin addicts. Percept. Mot. Skills., 27:143-146, 1968.

Appendix A
Table A I

Percentage of Marijuana Use By Drug Users

	M	A	B	L	H
never	--	13	20	8	19
1-5 times	50	21	16	10	10
6-10 times	8	3	7	8	14
11-15 times	4	5	3	3	5
16-20 times	9	13	10	10	14
more than 21 times	30	45	45	61	38

* For all tables in Appendix A, M = marijuana; A = amphetamine; B = barbiturates;
L = LSD; H = heroin

Table A II

Percentage of Amphetamine Use By Drug Users

	M	A	B	L	H
never	60	--	23	21	29
1-5 times	18	49	31	23	14
6-10 times	4	9	3	5	5
11-15 times	5	12	10	10	14
16-20 times	3	9	11	11	10
more than 21 times	10	22	23	31	28

Table A III
Percentage of Barbiturate Use by Drug Users

	M	A	B	L	H
never	77	51	--	47	38
1-5 times	11	21	49	18	19
6-10 times	3	6	12	2	5
11-15 times	1	4	7	7	5
16-20 times	2	5	10	8	5
more than 21 times	6	12	23	19	29

Table A IV
Percentage of LSD Use by Drug Users

	M	A	B	L	H
never	77	58	55	--	24
1-5 times	12	22	22	55	33
6-10 times	4	6	8	18	14
11-15 times	1	2	1	3	10
16-20 times	1	3	3	5	--
more than 21 times	5	9	11	19	19

Table A V
Percentage of Heroin Use by Drug Users

	M	A	B	L	H
never	93	87	82	77	--
1-5 times	3	8	10	11	52
6-10 times	2	2	4	8	29
11-15 times	--	--	--	--	--
16-20 times	--	1	--	2	5
more than 21 times	1	3	4	5	14

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Appendix B

Percentages of Responses to 42 Questions for No-drug

(ND), Marijuana (M), Amphetamine (A), LSD

(L),and Heroin (H) Groups

	ND	M	A	L	H
A. Age					
15-20	50	55	42	62	52
21-25	45	43	54	37	41
26-30	3	2	1	--	2
31 or older	2	--	2	--	2
B. Use of marijuana					
never	100	--	20	5	15
1-5 times	--	73	22	9	9
6-10 times	--	8	4	5	7
11-15 times	--	3	7	5	2
16-20 times	--	5	13	12	13
more than 21 times	--	12	30	54	39
C. Use marijuana primarily					
by myself	--	33	22	17	14
in a group	--	67	78	83	86

Appendix B continued

	ND	M	A	L	H
D. Use of amphetamines					
never	100	100	--	17	28
1-5 times	--	--	52	28	11
6-10 times	--	--	11	5	2
11-15 times	--	--	11	8	11
16-20 times	--	--	7	9	9
more than 21 times	--	--	12	29	37
E. Use amphetamines primarily					
by myself	--	--	63	44	35
in a group	--	--	27	56	65
F. Use of barbiturates					
never	100	100	59	61	54
1-5 times	--	--	20	18	13
6-10 times	--	--	9	5	11
11-15 times	--	--	3	7	2
16-20 times	--	--	2	9	28
more than 21 times	--	--	4	--	--
G. Use barbiturates primarily					
by myself	--	--	71	51	50
in a group	--	--	29	49	50

Appendix B continued

	ND	M	A	L	H
H. Use of LSD					
never	100	100	100	--	15
1-5 times	--	--	--	49	30
6-10 times	--	--	--	15	11
11-15 times	--	--	--	7	7
16-20 times	--	--	--	7	4
more than 21 times	--	--	--	21	33
I. Use of LSD primarily					
by myself	--	--	--	22	28
in a group	--	--	--	78	72
J. Use of heroin					
never	100	100	100	100	--
1-5 times	--	--	--	--	52
6-10 times	--	--	--	--	18
11-15 times	--	--	--	--	7
16-20 times	--	--	--	--	4
more than 21 times	--	--	--	--	14
K. Use heroin primarily					
by myself	--	--	--	--	47
in a group	--	--	--	--	53

Appendix B continued

	ND	M	A	L	H
L. Reason for starting					
feels good	--	40	22	32	33
friends	--	9	7	7	15
unhappy	--	5	6	8	15
don't know	--	12	11	8	9
other	--	33	43	37	24
M. Started taking drugs					
less than one year ago	--	57	17	14	11
1-2 years ago	--	33	31	25	17
3-4 years ago	--	9	27	37	28
5-6 years ago	--	2	10	16	20
more than 7 years ago	--	--	7	2	22
N. Father's age					
35-40	7	16	10	9	17
41-45	23	25	24	33	17
46-50	22	24	16	20	28
51-55	23	22	24	21	13
older than 56	19	14	20	9	22

Appendix B continued

	ND	M	A	L	H
O. Father's education					
less than high school	33	32	28	20	13
high school	37	37	37	38	50
some college	15	18	20	16	20
college graduate	12	14	12	20	17
P. Relationship with father					
excellent	55	52	50	53	39
good	30	34	28	24	26
fair	7	11	12	13	22
poor	4	3	8	8	9
Q. Father drinks					
never	27	20	27	17	28
primarily socially	41	46	35	44	28
moderately	23	30	29	23	22
heavily	6	5	1	10	17
R. Father smokes					
never	41	42	45	40	37
less than 1 pack daily	19	21	15	22	22
1 pack	28	34	28	25	28
1-2 packs	6	3	8	10	9
more than 2 packs	1	--	1	1	4

Appendix B continued

	ND	M	A	L	H
S. Mother's age					
35-40	17	23	20	26	22
41-45	32	31	33	35	24
46-50	24	24	24	15	22
51-55	17	15	14	16	17
older than 56	9	7	9	5	11
T. Mother's education					
less than high school	24	17	13	17	22
high school	51	56	56	53	41
some college	13	15	19	13	21
college graduate	9	12	9	14	13
U. Relationship with mother					
excellent	62	60	49	56	44
good	30	31	35	31	33
fair	5	7	10	9	11
poor	2	2	3	2	9
V. Mother drinks					
never	47	36	42	37	37
primarily socially	42	54	43	45	30
moderately	8	9	8	12	20
heavily	1	--	4	5	13

Appendix B continued

	ND	M	A	L	H
W. Mother smokes					
never	61	60	52	45	50
less than 1 pack daily	14	20	22	23	20
1-2 packs	21	18	19	22	13
more than 2 packs	2	2	8	8	13
X. Relationship between mother and father					
excellent	54	61	45	49	44
good	26	24	24	25	17
fair	7	7	10	15	17
poor	8	8	18	9	13
Y. Father and mother still living together	71	70	66	65	19
divorced	12	15	18	18	33
separated	2	3	5	7	19
one dead	8	10	10	8	24
don't know	1	2	1	3	5
Z. Father					
living	89	97	85	90	63
dead	8	3	12	7	15
don't know	1	--	2	2	20
AA. Mother					
living	94	96	95	93	70
dead	3	4	--	3	10
don't know	1	--	3	2	17

Appendix B continued

	ND	M	A	L	H
BB. Supporter of family					
laborer	9	19	5	9	11
craftsman	28	28	26	24	9
farmer	6	4	7	1	20
service worker	6	9	11	8	9
operative	5	4	3	7	9
sales worker	5	4	7	3	4
manager	15	20	14	18	17
semi-professional	7	6	8	6	7
professional	4	6	5	8	2
unemployed or don't know	15	10	14	15	12
CC. Income					
less than 5,000	8	9	3	8	13
5,000-10,000	33	28	29	31	19
10,000-15,000	30	27	30	22	30
15,000-20,000	13	22	26	10	19
more than 20,000	9	13	6	24	12
DD. Siblings					
none	7	8	9	6	9
1-2	45	41	43	53	30
3-4	29	33	32	21	30
5-6	11	9	10	15	13
7 or more	7	9	5	5	15

Appendix B continued

	ND	M	A	L	H
EE. Birth order					
only child	6	5	7	6	11
oldest	36	28	39	31	30
middle	35	50	39	38	46
youngest	21	17	15	25	9
FF. Education					
less than high school	4	8	9	21	11
high school	47	47	43	35	30
some college	33	34	40	37	35
college graduate	14	9	9	8	13
GG. Age completed school					
16 or younger	2	5	3	9	11
17-18	57	67	59	54	37
19-20	21	16	25	20	39
21-22	16	12	7	10	2
23 or older	2	1	3	1	4
HH. Truant					
never	54	36	26	24	11
1-3 times	22	24	27	20	24
4-7 times	6	8	15	10	4
8 or more times	16	29	35	44	54

Appendix B continued

	ND	M	A	L	H
II. Expelled					
never	85	71	67	48	35
1-2 times	11	21	22	22	22
3-4 times	2	5	3	8	17
5-6 times	1	1	7	8	13
7 or more times	1	1	2	6	17
JJ. Arrested					
never	86	80	60	48	24
1-2 times	10	16	3	22	22
3-4 times	2	3	6	15	24
5-6 times	--	--	2	7	7
7 or more times	1	1	2	6	17
KK. Marital status					
married	15	10	9	9	17
single	82	88	83	85	63
divorced	1	2	5	2	17
LL. Children					
none	83	91	80	79	50
1-2	8	9	16	15	24
3-4	1	--	1	2	17
5-6	--	--	--	--	2
7 or more	--	--	--	--	4

Appendix B continued

	ND	M	A	L	H
MM. Marriage					
Excellent	57	81	25	47	37
good	31	15	50	41	30
fair	7	3	18	13	15
poor	5	1	7	--	18
NN. In the Navy					
less than 1 year	52	67	33	24	20
1-2 years	34	26	51	62	50
3-4 years	6	4	11	10	20
5-6 years	2	1	--	3	2
7 or more years	3	--	--	--	7
OO. Captain's mast					
never	94	94	83	77	41
1-2 times	5	6	10	13	24
3-4 times	--	--	3	4	9
5-6 times	--	--	--	3	13
7 or more times	--	--	--	3	11
PP. Courts-martial					
never	96	98	98	98	73
1 time	3	2	1	1	12
2 times	--	--	1	1	4
3 times	--	--	--	--	2
4 or more times	--	--	--	1	7

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Appendix C

Table C I

Summary of Multiple Correlation Using No Drug Use As The
Criterion (N=609)

Variable	Cumulative Multiple R	F Value
* arrests	.2886	65.8786
* truancy	.3576	37.0175
* captain's mast	.3800	14.0153
* mother's education	.4014	14.3380
* marital status	.4138	8.8541
* suspensions	.4252	8.3789
* years in service	.4336	6.3656
* mother drinks	.4401	5.0892
age completed school	.4462	4.8161
* mother living/dead	.4502	3.2128
* mother smokes	.4534	2.5983
* relationship with mother	.4565	2.5298
* siblings	.4593	2.3596
education	.4619	2.2047
mother's age	.4638	1.5715
* father's education	.4651	1.0672

* inverse relationship with criterion

Table C II
Summary of the Multiple Correlation Using Marijuana
as the Criterion (N=43)

Variable	Cumulative Multiple R	F Value
truancy	.1115	9.1281
* captain's mast	.1408	5.4667
father drinks	.1622	4.8233
marital status	.1806	4.7117
mother's education	.1936	3.6513
* age completed school	.2061	3.7598
years in service	.2150	2.8166
siblings	.2212	2.0403
* father's age	.2269	1.9261
* mother smokes	.2324	1.8964
mother drinks	.2377	1.9168
* arrests	.2422	1.6136

* inverse relationship with criterion

Table C III
Summary of the Multiple Correlation Using Amphetamines
As the Criterion (N=30)

Variable	Cumulative Multiple R	F Value
truancy	.1195	10.5151
mother/father rel.	.1369	3.2905
* father drinks	.1527	3.3787
family income	.1636	2.5635
* mother living/dead	.1724	2.2030
courts-martial	.1877	4.1176
* captain's mast	.1960	2.3647
years in service	.2063	3.1171
marital status	.2144	2.5661
arrests	.2197	1.7152
* mother smokes	.2239	1.4340
relationship with mother	.2277	1.2619
relationship with father	.2318	1.4282

* inverse relationship with criterion

Table C IV
Summary of the Multiple Correlation Using LSD as the
Criterion (N=18)

Variable	Cumulative Multiple R	F Value
arrests	.1687	21.2414
mother smokes	.2103	11.9463
* mother living/dead	.2294	6.4196
captain's mast	.2465	6.2449
mother's education	.2544	3.0762
* age completed school	.2626	3.2860
father living/dead	.2695	2.8468
* family income	.2757	2.6218
father's education	.2831	3.2102
birth order	.2878	2.0773
education	.2915	1.7006
courts-martial	.2942	1.2334
years in service	.2973	1.4145

* inverse relationship with criterion

Table C V
Summary of the Multiple Correlation Using Heroin as
the Criterion (N=27)

Variable	Cumulative Multiple R	F Value
captain's mast	.5689	347.0581
suspensions	.6252	79.8319
father living/dead	.6482	36.5042
arrests	.6569	14.4361
mother's education	.6605	6.1058
* age	.6641	6.0809
mother smokes	.6670	5.0867
mother drinks	.6697	4.6887
father drinks	.6714	3.0381
* education	.6727	2.1539
courts-martial	.6738	1.9758
family income	.6748	1.8697
father's education	.6756	1.3429
* father smokes	.6763	1.1732
* birth order	.6769	1.0858

* inverse relationship with criterion